ACCIDENT

Aircraft Type and Registration:	Kolb Twinstar Mk 3 (Modified), G-MYMI
No & Type of Engines:	1 Rotax 582 piston engine
Category:	1.4
Year of Manufacture:	1995
Date & Time (UTC):	29 May 2005 at 1620 hrs
Location:	Netherthorpe Airfield, Nottinghamshire
Type of Flight:	Private
Persons on Board:	Crew - 1 Passengers - 1
Injuries:	Crew - 1 (Serious) Passengers - None
Nature of Damage:	Left main landing gear leg collapsed
Commander's Licence:	National Private Pilot's Licence
Commander's Age:	43 years
Commander's Flying Experience:	99 hours (of which 9 were on type) Last 90 days - 4 hours Last 28 days - 2 hours
Information Source:	Aircraft Accident Report Form submitted by the pilot and further enquiries by the AAIB

History of the flight

The pilot and his passenger were on a cross country flight from Horsley Brook Farm (Staffordshire) to Netherthorpe Airfield. The surface wind for the area near Netherthorpe had been reported as 10 mph (8.6 kt) from the south-west and visibility greater than 10 km. The pilot carried out an overhead join into the Netherthorpe circuit and was descending 'dead side' when another aircraft called 'long finals'. The pilot saw this other aircraft whilst on the base leg to Runway 24 grass and decided to initiate a go-around. During his second circuit he was lined-up on final approach when he experienced a 'huge lump of turbulence' that caused his aircraft to roll left to approximately 45° of bank. He rolled the wings level and because he was then a little low on the

approach he also applied some power. As the aircraft crossed the runway threshold the aircraft experienced more turbulence and sank. The pilot applied full power but it was insufficient to arrest the high rate of descent

resulting in a heavy landing that caused the left main landing gear leg to collapse. The engine continued to run with no damage to the propeller but the aircraft came to rest quickly. The pilot and his passenger were able to exit the aircraft unassisted but it was later revealed that the pilot had suffered a serious back injury.

The approach had been carried out without flaps at the pilot's normal approach speed of 55 mph (48 kt). The flaps-up stall speed was 38 mph (33 kt). The elevator trim was full nose-down as was normal in this configuration. Due to the engine's high thrustline, the aircraft has a tendency to pitch nose-down when power is applied.

Downloaded GPS data

A download of the onboard GPS, which recorded the aircraft's position approximately every 10 seconds, revealed that the average groundspeed of the aircraft during final approach was 51 mph. The average groundspeed during the downwind leg was 53 mph and on the base leg it was 49 mph. The pilot stated that he flew the entire circuit at the same indicated airspeed, approximately 55 mph. The GPS data can, therefore, be interpreted to show that his average true airspeed was 52 mph and that there was less wind than the reported 10 mph from the south-west.

Discussion and conclusions

There were some houses and trees to the north of the short-final centreline and the pilot thought he might have experienced a 'rotor' of wind from that direction. However, the light wind as evidenced by the GPS data indicated that this was unlikely. The preceding landing aircraft had vacated the runway by the time G-MYMI was on short finals. The preceding aircraft type was not known but was similar in size to a Cessna 152 or Cessna 172. The distance from this aircraft and its low weight would suggest that a wake turbulence encounter was unlikely although not impossible. The pilot described the weather as 'thermic' because during the flight he had experienced many updrafts and downdrafts. Consequently the turbulence and sudden left roll experienced by G-MYMI during the approach was probably caused by a thermally induced updraft or downdraft. The high sink rate and heavy landing were probably a result of a loss of airspeed, possibly aggravated by the turbulent conditions.